

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-16 (cancelled).

17 (New). Startup circuit for a power supply, said startup circuit comprising:

an input for connecting a source of high voltage thereto,

an output rail for feeding rectified voltage to the power supply,

a first energy storage device coupled to the output rail for storing energy when voltage is first applied to the input,

a second energy storage device coupled to an output of the power supply for storing energy when a voltage appearing at the output of the power supply reaches substantially steady state, and

a switching circuit coupled to the first energy storage device and to the second energy storage device and being responsive to the first energy storage device having

sufficient energy for transferring said energy to the second energy storage device and disconnecting the first energy storage device from the output rail;

characterized in that:

the power supply is a universal or variable power supply that is adapted to operate over a range of power supply voltages fed to said input,

a starting resistor is coupled between the output rail and the first energy storage device for sourcing current to the first energy storage device, and

the switching circuit is responsive to the first energy storage device having sufficient energy for disconnecting the starting resistor from the output rail.

18 (New). The startup circuit according to claim 17, being part of a power supply for an LED lighting system.

19 (New). The startup circuit according to claim 17, wherein the first energy storage device is a first capacitor.

20 (New). The startup circuit according to claim 17, wherein the second energy storage device is a second capacitor.

21 (New). The startup circuit according to claim 19, including:

a current source connected to the input for charging the first capacitor, and

a first comparator having a first input coupled to an output of the first capacitor and having a second input connected to a first reference voltage for generating a first switching signal when the output of the first capacitor exceeds the first reference voltage;

a second comparator having a first input coupled to an output of the second capacitor and having a second input connected to a second reference voltage for generating a second switching signal when the output of the second capacitor exceeds the second reference voltage;

said switching circuit being responsive to the first switching signal for changing from an initially open circuit wherein the first capacitor is isolated from the second capacitor to a closed circuit whereby the first capacitor is connected in parallel with the second capacitor; and being responsive to the second switching signal for disabling charge flow to the first capacitor.

22 (New). The startup circuit according to claim 21, wherein the switching circuit includes:

a first switch coupled to the current source and having an initial state wherein the current source is coupled

to the first capacitor and having a second state wherein the current source is decoupled from the first capacitor, and

a second normally open switch coupled between respective outputs of the first and second capacitors.

23 (New). The startup circuit according to claim 22, wherein the first and second switches include semiconductor devices.

24 (New). The startup circuit according to claim 23, wherein the first and second switches are bipolar junction transistors.

25 (New). The startup circuit according to claim 21, wherein the first comparator includes a zener diode.

26 (New). The startup circuit according to claim 21, wherein the second comparator includes a zener diode.

27 (New). The startup circuit according to claim 21, wherein the current source includes a transistor for feeding current through a resistor.

28 (New). The startup circuit according to claim 21, wherein the switching circuit includes a first switch comprising resistors in combination with a transistor for controlling the current source.

29 (New). The startup circuit according to claim 21, wherein the switching circuit includes a second switch comprising resistors in combination with a transistor.

30 (New). A universal or variable power supply including a startup circuit, said startup circuit including:
an input for connecting a source of high voltage thereto,

an output rail for feeding rectified voltage to the power supply,

a first energy storage device coupled to the output rail for storing energy when voltage is first applied to the input,

a second energy storage device coupled to an output of the power supply for storing energy when a voltage appearing at the output of the power supply reaches substantially steady state, and

a switching circuit coupled to the first energy storage device and to the second energy storage device and being responsive to the first energy storage device having sufficient energy for transferring said energy to the second energy storage device and disconnecting the first energy storage device from the output rail;

characterized in that

the power supply is a universal or variable power supply that is adapted to operate over a range of power supply voltages fed to said input,

a starting resistor is coupled between the output rail and the first energy storage device for sourcing current to the first energy storage device, and

the switching circuit is responsive to the first energy storage device having sufficient energy for disconnecting the starting resistor from the output rail.

31 (New). The universal or variable power supply according to claim 30, being an integral unit.

32 (New). The universal or variable power supply according to claim 30, being part of an LED lighting system.

33 (New). The universal or variable power supply according to claim 30, including a power factor correction circuit.

34 (New). A method for achieving substantially constant losses in a universal or variable power supply having an output rail that feeds current to a capacitor via a resistor and is coupled to a lamp control circuit that is fed by a backup power supply in steady state, the method comprising:

decoupling the resistor from the output rail when steady state is achieved so as to eliminate losses through the resistor.